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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/583,847	07/15/2008	Toshihisa Nozawa	33082M331	6363

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SMITH, GAMBRELL & RUSSELL  
1130 CONNECTICUT AVENUE, N.W., SUITE 1130  
WASHINGTON, DC 20036

EXAMINER
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JIANG, CHEN WEN

ART UNIT	PAPER NUMBER
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3744

MAIL DATE	DELIVERY MODE
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09/28/2010

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/583,847	<b>Applicant(s)</b> NOZAWA ET AL.	
	<b>Examiner</b> Chen-Wen Jiang	<b>Art Unit</b> 3744	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 July 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 July 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>20060621, 20080715</u> .                                      | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-11 and 13 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Iwamoto (U.S. Patent Number 6,148,626).

In regard to claims 1-6, Iwamoto discloses a chiller apparatus for temperature control the substrates within a desired uniform temperature range. Referring to Figs.2 and 3, the apparatus comprises a refrigerator 2, a plurality of substrate processing units A, B, a supply line 5, feedback line with pump P<sub>2</sub>, circuits 23, 26, regulating valves V<sub>2</sub>-V<sub>5</sub>, pumps P<sub>2</sub>, P<sub>3</sub>, temperature sensors and controller 14. Under the principals of inherency, if a prior art device, in its normal and usual operation, would necessarily perform the method claimed, then the method claimed will be considered to be anticipated by the prior art device. When the prior art device is the same as a device described in the specification for carrying out the claimed method, it can be assumed the device will inherently perform the claimed process. *Ir re King*, 801 F.2d 1324, 231 USPQ 136 (Fed. Cir. 1986).

In regard to claim 7, three-way valves V<sub>4</sub> and V<sub>5</sub> determine the cooling medium paths of 23-28.

In regard to claim 8, sensors determine the temperature of A and B and controller 14 controls valves V<sub>4</sub> and V<sub>5</sub> opening.

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In regard to claim 9, the circuits can include heater 15 and controlled by the controller 14.

In regard to claims 10 and 11, the apparatus comprises pumps P<sub>2</sub> and P<sub>3</sub> and buffer tank

6. Iwamoto discloses load circuits 29 each including a buffer tank.

In regard to claim 13, Iwamoto discloses plasma processing in which wafer is processed is known in the art.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Iwamoto in view of Fukuyama et al. (JP 05163096) or Stege et al. (U.S. Patent Number 6,062,485).

Iwamoto discloses the invention substantially as claimed. However, Iwamoto does not disclose bypass line. Fukuyama et al. disclose bypass line with valve 6 and Stege et al. disclose bypass line with valve 31. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus of Iwamoto with bypass in

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view of Fukuyama et al. or Stege et al. so as to bypass the loads and provide pressure balance in the system.

5. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Laude-Bousquet (U.S. Patent Number 5,743,110) in view of Iwamoto (U.S. Patent Number 6,148,626) or vice versa.

Laude-Bousquet discloses an unit for distribution and/or collection of cold and/or of heat, including: (a) a main exchanger 1 of heat between a refrigerant fluid 2, 21, 22 and a heat transfer fluid 3; (b) a means for producing cold with a means for heat exchange with the heat transfer fluid; (c) a closed main circuit 3 for continuous free circulation of the heat transfer fluid; (d) at least one heat transfer fluid drawing loop 7 to 11; characterized in that the flow cross-section of the main circuit 3, the maximum refrigerating power of the means for producing cold,  $P_{max}$ , expressed in W, and the main heat exchanger 1 are sized relative to one another in order to satisfy, in operation, the desired relationship. Each drawing loop 7 to 11 includes, in a known manner: an upstream leg 74, 84, 94, 104 or 114 and a downstream leg 75, 85, 95, 105 or 115, on either side of the secondary exchanger 72, 82, 92, 102 or 112; the additional pump 71, 81, 91, 101 or 111, situated in one of these legs; two stop valves 73, 83, 93, 103 or 113, enabling each drawing loop to be isolated from the main circuit 3. Appropriate substitution of two-way and three-way valves is well known in the art. Laude-Bousquet discloses the invention substantially as claimed. However, Laude-Bousquet does not disclose for substrate processing system. Iwamoto discloses plurality secondary circuit temperature control system can be used in substrate processing system. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to apply the plurality secondary circuit temperature

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control of Laude-Bousquet to the system of Iwamoto so as to provide alternative usage of temperature control system and consider the wafer unit as a thermal load.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chen-Wen Jiang whose telephone number is (571) 272-4809.

The examiner can normally be reached on Monday-Thursday from 8:00 to 6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl Tyler can be reached on (571) 272-4834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Chen-Wen Jiang/  
Primary Examiner, Art Unit 3744